GC75

Sony Ericsson GPRS PC Card Modem GC75

User's Guide

Sony Ericsson

Content

Sony Ericsson GPRS PC Card Modem GC75

Second edition (January 2003)

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Introduction

Congratulations and thank you for buying the Sony Ericsson GPRS PC Card Modem GC75. The GC75 is a triple band GSM product that enables you to communicate wirelessly from your laptop on all five continents, in over one hundred and sixty countries. As the GC75 provides wireless communications you no longer need to carry cables, telephone jack converters, chargers and batteries. The GC75 is very simple to install and use; the software provided allows you to select the best data service available so that the GC75 is always available for data transfer.

The GC75 enables your laptop PC to:

• Browse the Internet

• Send and receive e-mails

• Receive information services in real time

• Access files, databases and discussion groups

• Send and receive SMS text messages

• Edit SIM card entries

> **Note:**
> Before using your GC75 you MUST read *Important Information* on page 41.

Hardware Overview

The GC75 is a standard 16 bit type II PC card. It is standard length and only the antenna protrudes outside the PC card slot.

The GC75 operates in 3 or 5 volt slots by automatically switching to the correct voltage. The amount of power drawn from the laptop battery is dependant upon a number of factors including status, frequency band, distance to GSM base station and number of timeslots used. See *Technical Specifications* on page 43 for a general guide to power consumption.

Before you can start using the GC75 you need to put the hardware together. You will also need a SIM card.

SIM Card

When you subscribe to a mobile network operator, you are issued with a SIM card (Subscriber Identity Module card). The SIM contains your personal subscriber data. You need a SIM to use GC75.

Software Overview

GC75 Manager

You can use the GC75 Manager to:

- Display GC75 status information
- Create or modify connection settings
- Connect to the Internet or a corporate network
- Manage GC75 settings
- Manage SIM card and PC phonebooks
- Send and receive SMS messages

Using the GC75 with your Applications

Data Programs

You can use the GC75 as a modem to provide Intranet/Internet connectivity for a wide range of applications.

The GC75 can also be programmed at command level by application developers for more details see the *AT Commands Manual*.

Fax Programs

You can use the GC75 as a fax provided you have the correct software, e.g. Microsoft Fax (Windows 2000 and XP).

The GC75 can also be programmed at command level by application developers for more details see the *AT Commands Manual*.

Documentation

The GC75's documentation is designed to enhance your understanding of its capabilities. The following guides are provided:

- A printed Quick Start Guide aimed at getting you operational as quickly as possible.
- An online User's Guide (this document) containing a comprehensive description of the GC75 functionality. You can read the guide on the computer screen or print it on to either European A4 or American Letter sized paper.
- An online AT Commands Manual, aimed at application developers, containing a full list of all the modem commands that can be used with GC75. The manual can be read online or printed in the same way as the User's Guide.

The User's Guide and the AT Commands Manual are located on GC75 CD-ROM as Adobe Acrobat PDF files. The GC75 CD-ROM also contains Adobe Acrobat Reader® which you can install if necessary.

The User's Guide and the AT Commands Manual can be saved on to your computer's hard drive during the software installation. If you selected the shortcut option during installation the documentation is accessed via **Start** ➡ **Programs** ➡ **Sony Ericsson**. Alternatively you can open the documentation and either read or print it directly from the CD-ROM.

Illustrations

The illustrations in this manual were obtained using the GC75 on a Microsoft Windows® 2000 operating system. The dialogs that appear on your PC may differ depending on the version of Windows® in use.

Getting Started

Checklist

Make sure the following items are in the box when you unpack it:

- **Protective plastic case for storing the GC75 and its antenna**
- **GC75 PC Card**
- **SIM tray**
- **Antenna**
- **Quick Start Guide**
- **CD-ROM**#
  The CD contains; drivers, software, documentation and a readme file.

System Requirements

This section lists the network subscriptions, hardware and software requirements for running the GC75 PC Card.

Network and Subscription

The network subscription you use in conjunction with your GC75 depends on the subscriptions your network operator can provide. Contact your network operator or service provider to make sure the options you require are available. Make sure that data options are included in your subscription, as these are usually optional services.

> **Note:**
> Mobile operators often provide a number of connectivity options via GPRS such as WAP and Internet, so check that the Internet or VPN service you require is enabled for your subscription.

The functionality of the different subscriptions available from networks operators are discussed below:

Circuit Switched Data (CSD)

CSD is the original GSM network data transfer method, used in the past for WAP. Almost all GSM networks have this capability at 9.6 kbps. It is possible for the network to upgrade the speed to 14.4 kbps. The GC75 operates at this higher speed where available.

High Speed Circuit Switched Data (HSCSD)

HSCSD is an enchanced GSM network capability offered by some network operators. It enables circuit switched data connections to run at a higher data speed, using more than one wireless 'timeslot' for the data transmission. This is ideal for providing a faster connection to existing corporate or ISP dial-up facilities. The preferred connection speed is selected when you define the connection using the **Connection Wizard**.

General Packet Radio Service (GPRS)

GPRS is a new network connection which provides "always on" mobility. The connection set up is fast and, once connected, applications may send and receive data whenever required. In today's GPRS networks, the GC75 receives data at speeds up to 53.6 kbps and transmits at speeds up to 26.8 kbps.

Short Message Service (SMS)

The PC can send and receive SMS text messages using the SMS Messages screen in the GC75 Manager, see *GC75 Manager SMS Messages Screen* on page 33, for more details.

Hardware

You will need:

*   A PC that has the minimum specification recommended by Microsoft to run the version of Windows® installed on it.

*   A 16 bit type II PC Card slot.

*   Sony Ericsson GPRS PC Card Modem GC75

Software

You will need:

*   Windows® 98SE, Me, 2000 (SP2) or XP.

*   Sony Ericsson GC75 Communication Suite CD-ROM.

Services Available Over the Internet

The Sony Ericsson web site contains support to facilitate easy communications and rapid information retrieval, wherever you are. It gives you access to on-line customer services, on-line user manuals, software downloads, and useful information. The address is:

http://www.SonyEricsson.com/support

Sony Ericssons home page address is:

http://www.SonyEricsson.com

Installation

The GC75 Communication Suite CD-ROM contains the software required to operate your GC75. The software is simple to set up and operate, but before you begin you will need to make sure that the services you require are included on your SIM card subscription. For an explanation of the services that are available see *Network and Subscription* on page 8. Contact the organisation that supplied you with your SIM card and request that the specific services (GPRS, HSCSD, CSD or SMS) you require are added to your subscription.

The CD-ROM contains the following software:

- GC75 Manager
- User Documentation
- On-line Help
- ReadMe text file containing the latest information about the GC75

GC75 Hardware Set Up

1. Collect your GC75 card, antenna and SIM card together.
2. Place the SIM card in to the GC75 SIM tray and push the tray back into the GC75. Make sure the tray is closed properly before proceeding.

    Note:
    The cut corner of the SIM card must be placed into the SIM tray as demonstrated below, the SIM contacts should face upwards.

3. Connect the antenna to the GC75.
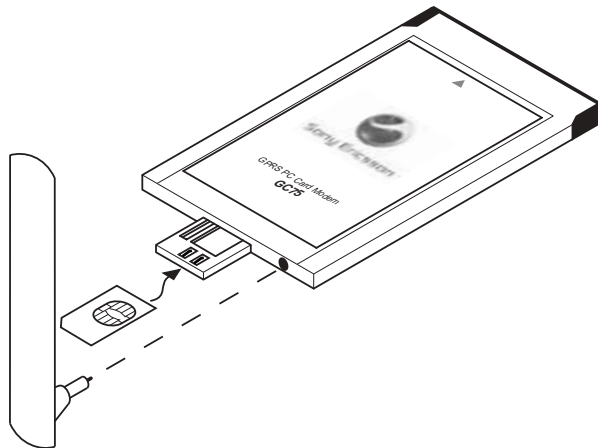
Installing the Software

1. Insert the GC75 Communication Suite CD-ROM in your CD drive.

After a few seconds a Sony Ericsson splash screen is displayed.

Note:
If the CD-ROM does not autorun, select **Start** ➡ **Run** and type *D:\Setup.exe* into the Run dialog. (Where *D* is your CD drive.)

2. The **Choose Setup Language** dialog opens. Click on the drop down list and select the installation language for your GC75 Software. Click **OK**.

3. The InstallShield Wizard for Sony Ericsson GC75 Manager opens; follow the instructions on screen. When installation is complete click **Finish**.

4. Insert the GC75 PC Card. Make sure the GC75 is fully inserted. A beep signals that your computer has recognised it.
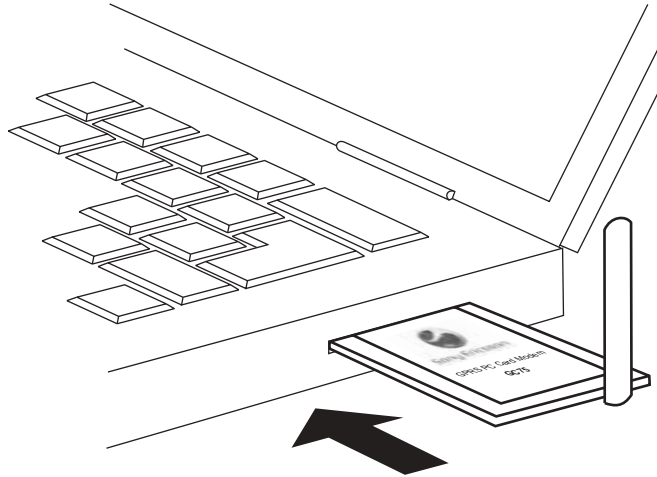
5. Your PC recognises that new hardware has been inserted and installs the necessary driver. This process will take a few seconds.

6. Select **Programs** ➡ **Sony Ericsson** ➡ **GC75 Manager** to start using your GC75.

7. The GC75 and GC75 Manager are ready for use.

Start Using GC75 Manager

1. To start GC75 Manager select **Start ➡ Programs ➡ Sony Ericsson ➡ GC75 Manager**.

2. If requested, enter your SIM Card/Phone Lock PIN and click **OK**. It is only necessary to enter the PIN number once during a PC session.

   You are allowed three attempts to enter the correct PIN code. If you fail to enter the SIM PIN correctly it is blocked and if you fail to enter the Phone Lock PIN correctly your GC75 is locked. Contact your network operator for an unblock code (PUK). Enter the unblock code into the Card Blocked dialog and enter a new PIN code and confirm it.

   To set the SIM Card PIN and Phone Lock PIN, see *Locks* on page 23.

3. The Radio dialog opens, select the required state for your GC75 radio transmission. See *GC75 Manager Settings Options* on page 14 for more details.

4. The GC75 Manager opens, displaying the **Status** screen. Connectivity details are displayed on this screen, the current signal strength and GPRS availability should be listed. See *GC75 Manager Status Screen* on page 20, for more details.

5. The **GC75 Manager Icon** is displayed in the system tray of your PC.

GC75 Manager Icon

The **GC75 Manager Icon** shows the current status of the GC75, which is typically the current network signal strength and the GSM/GPRS service status, similar to a mobile phone display. If you right click on the **GC75 Manager Icon** a menu is displayed, see *The GC75 Manager Icon Menu* on page 13 for details on the menu options.

Place your mouse cursor over the **GC75 Manager Icon** to display text indicating:

- GSM or GPRS Service availability
- Network name
- Connection information

Two standard Windows® operating system icons also appear in the system tray when the GC75 is inserted in your PC. They are the **Dial-Up Networking** icon and the **PC card** icon.
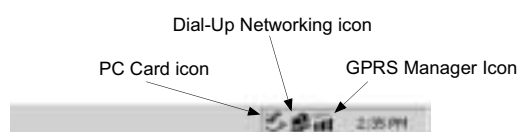
- **Dial-Up Networking Icon (DUN)**#
  This icon is only visible when a dial-up connection has been established. This icon gives you information about the active GC75 connection. Right click on the icon to see the Dial-Up Networking menu; you can also disconnect a connection from here. See **Start ➡ Help** for more details.

- **PC Card icon**#
  Indicates that a PC card is present and allows the user to see certain properties and also to stop/remove the card.

Safe Removal of the GC75

You must stop the GC75 before attempting to remove it.

1. Close the Dial-up Networking Connection.

2. Exit GC75 Manager.

3. Click on the **PC Card** icon. A list of currently connected PC Cards is displayed. Select **Stop Sony Ericsson GC75 Wireless Card**.

4. A dialog is displayed telling you it is safe to remove the card.

   Important!
   Incorrect removal of the GC75 can damage the card.

GC75 Manager Icon Status

The **GC75 Manager Icon** icon displays the status of the GC75 network connection.

 Radio is set to off or the **GC75 Manager** has disconnected the GC75

 The radio transmitter is enabled, but there is no GSM or GPRS service available

 The GC75 has GSM service and indicates a signal strength of 3 out of 5 bars. CSD, HSCSD, SMS and fax may be used, provided these are supported by the subscription. GPRS is not available

 The GC75 has GSM and GPRS service

The GC75 Manager Icon Menu

Right click the **GC75 Manager Icon** icon to see the menu options. When you right click on the icon the **GC75 Manager** is displayed.

Note:
Some of the **GC75 Manager Icon** icon menu options are disabled, depending on the current state of the GC75.

The **GC75 Manager Icon** menu options are described below.

Open

Select **Open** to open the **GC75 Manager**. For more information on a current HSCSD or GPRS connection use your mouse and hover over the **GC75 Manager Icon** and the standard Windows **Dial-Up Networking Icon (DUN)** or look at the Status screen of the **GC75 Manager**.

Radio Status

This menu option is dynamic. It monitors the current state of the GC75 radio transmitter and gives you the option to switch to the opposite state, for example, if your GC75 Radio transmitter is on the menu option reads **Turn Radio Off**.

You can also set the status of the radio transmitter by selecting **Settings...** in the **GC75 Manager File** menu. See *GC75 Manager Settings Options* on page 14, for more details.

Connect

Connects to the most recently used GC75 dial-up connection.

Help

Opens the GC75 Manager Online Help. You can also launch the Online Help from the **GC75 Manager** Help Menu. Pressing **F1** in any of the **GC75 Manager** dialogs opens the relevant help screen.

Exit

Closes the **GC75 Manager**, the GC75 Manager Icon remains in the Status Bar. Re-open **GC75 Manager** to make full use of all the GC75 functionality.

GC75 Manager Settings Options

You can change the general behaviour of the GC75 Manager operates from the **Settings...** option in the **File** menu.

1. Select **Settings...** in the **File** menu. The Settings dialog opens, the **Radio Power** tab is displayed.
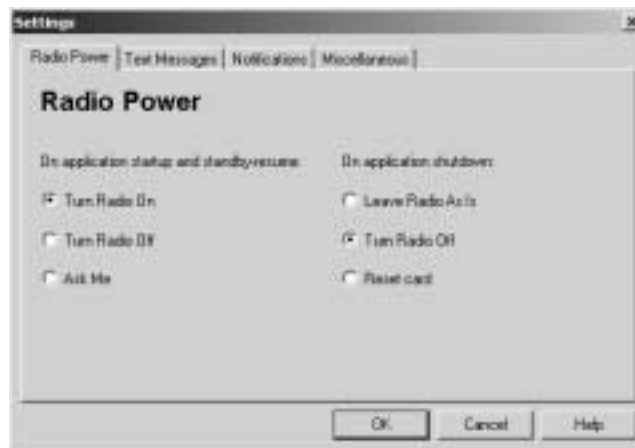
2. Use the tab to specify the start up, stand by and shutdown states you want the radio transmitter to enter. The radio mode you specify at GC75 Manager start-up will appear selected on the Radio tab.

On	Switches the modem's radio transmitter on.
Off	Switches the modem's radio transmitter off.
Ask	Triggers a dialog to be displayed every time the PC is turned on. The dialog asks you if the radio transmitter should be turned on or off during the active PC session. This is also called Aeroplane mode, because it prevents the radio transmitter automatically turning on. This is a useful feature in areas where radio transmitters are not allow; aircrafts, hospitals or blasting areas. Your GC75 is set to Ask by default.

Leave Radio As Is	At shutdown the card is left powered as is (could be on or off depending on previous user action) and any established connection is left alone.
Turn Radio Off	At shutdown the radio is turned off.
Reset card	Resets the GC75 default settings.

3. Click the **Text Messages** tab. Use this tab to enable reception of specific message classes from the SMS Cell Broadcast service and to set the SMS received audio alarm to on or off. Select the radio buttons to activate the options.

Example of SMS Cell Broadcast message types:

Code:	Cell Broadcast Message
000	Index
010	News Flashes
020	Hospitals
030	Long-distance road reports
040	Weather
050	District (base station identity)

To enter multiple SMS Cell Broadcast message types separate each entry with a comma, for example, 000, 034, 076.

Note:
SMS Cell Broadcast message types are network operator specific. Contact your network operator for more details.

4. Click the **Notifications** tab. You can decide if you want to display a splash screen every time GC75 Manager is opened and a program end confirmation box. Select the radio buttons to activate the options.

5. Click the **Miscellaneous** tab.
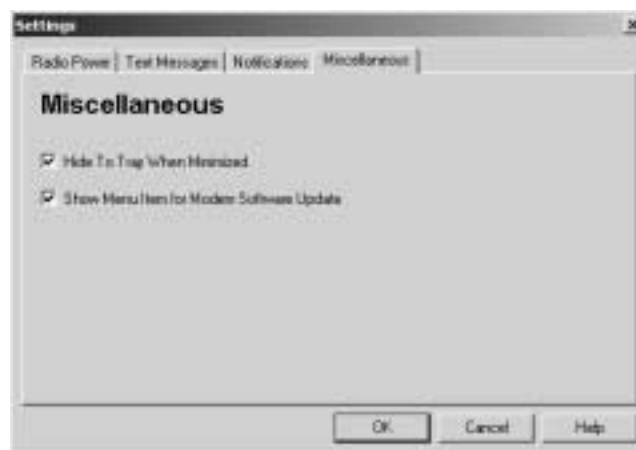
6. From this tab you choose to:#
Hide To Tray When Minimized - if checked only GC75 Manager icon in the system tray is visible, when GC75 Manager is minimized. The GC75 Manager is not displayed in the Windows task bar.#
Show Menu Item for Modem Software Update - if checked **Modem Software Update...** appears in the **File** menu. Select **Modem Software Update...** to prepare your GC75 modem drivers for a firmware update, using the Sony Ericsson Update Service Tool.

Note:
To use the **Modem Software Update...** option, you must have the Sony Ericsson Update Service Tool. This is freely available on the Sony Ericsson's web site, see www.SonyEricsson.com for more details.

7. Click **OK** to save the changes and close the **Settings** dialog.

Create a Dial-Up Connection

1. Click ![star icon] in the menu bar or select **View** ➡ **Connection Wizard**. The Connection Wizard opens.

2. Select the radio button next to **Create a new dial-up connection**, enter a name, for example 'My Connection', click **Next**.

3. The **Type of Connection** screen opens. From here you select the type of connection you require:
   - For GPRS see steps 4 to 8
   - For CSD/HSCSD see steps 9 to 12

GPRS Connection

4. Select **GPRS**. Select your Network Operator from the **Choose Network** drop down list. If your Network Operator isn't listed selected **<Other>**. Click **Next**. #
   See *Network and Subscription* on page 8 for more information on GPRS.

   Note:
   Type the first letter of the Network Operator you require into the field to list all the operators that start with that letter.

   Note:
   The **Choose Network** list is created from a file supplied on the GC75 Communication Suite CD ROM. This file will be automatically updated by Sony Ericsson periodically.

5. Your Network Operator's Access Point Name or Names (APNs) are displayed, click on the APN you want to use. If no APNs are listed contact your Network Operator and ask them to supply an APN. Click **Add** and enter the APN provided into the dialog.

6. To modify the selected APN's settings, Click **Advanced...**. See *Appendix A - Connection Parameters* on page 53, for descriptions of the updateable parameters in the Advanced dialog. Click **Apply** to save any changes before closing the dialog. Click **Next**.

7. If you have a logon for your service provider, enter you **User ID** and **Password** into the specific fields. If you don't need a username and password to connect leave the fields blank. Click **Next.**

   Note:
   Some versions of Windows® deliberately change the number of asterisks that represent a password and place asterisks in the password field when the password is blank in order to make the display secure.

8. Click **Finish** to create your Dial-up or **Back** to review your settings.

HSCSD or CSD Connection

9. Select CSD/HSCSD. Select your Network Operator from the **Choose Network** drop down list. If your Network Operator isn't listed selected **<Other>**. Click **Next**.

10. If you selected a Network Operator from the **Choose Network** drop down list, the telephone number screen should be automatically filled in. #
If you selected **<Other>** from the **Choose Network** drop down list; enter the number you need to dial to connect to your Network Operator in the **Telephone Number** field; include your country and area code. Ensure **Use Area Code and Country Code** is de-selected. Click **Next**.

    Note:
    Contact your Network Operator for a telephone number if necessary.

11. Click **Advanced...**. To create a CSD/HSCSD connection you must specify your preferred network connection speed from the drop down list and the method you want to use to connect to the network, on the Speed tab of the Advanced dialog. Click **Next**.

    Note:
    If you are unsure which speed to choose from the **Speed** tab, start with 9600, and check to see if it works. If it is successful increase the speed until you find the appropriate setting.

    See *Appendix A - Connection Parameters* on page 53, for descriptions of the updateable parameters in the **Advanced** dialog. Click **Apply** to save any changes before closing the dialog.

12. If you need a **User ID** and **Password** to logon to your service provider enter them into the specific fields. If you don't need a username and password leave the fields blank. Click **Next.**

    Note:
    Some versions of Windows® deliberately change the number of asterisks that represent a password and place asterisks in the password field when the password is blank in order to make the display secure.

13. Click **Finish** to create your Dial-up or **Back** to review your settings.

Modify a Connection

1. Select **Modify a Dial-up connection**. The **Select a Connection** drop down menu is activated. Click on the menu and select the connection you want to modify.
2. Click **Next**.
3. Change settings as required.

Delete a Connection

1. Select **Delete a Dial-up connection**. The **Select a Connection** drop down menu is activated. Click on the menu and select the connection you want to delete.
2. Click **Next**. The Success screen is displayed. Click **Finish** to close the **Connection Wizard**.

Using your Connection

To Connect
1. Open GC75 Manager.
2. If requested enter your SIM Card PIN and click **OK**. The Status screen is displayed.
3. Select the connection you require from the drop down list and click **Connect**.

To disconnect an active connection
1. Click **Disconnect** on the Status screen.

The GC75 Manager ends the connection.

Alternatively:

Right click on the **Dial-up Networking** icon in the system tray and select **Disconnect**.

Browse the Internet

You can connect to the Internet using a CSD/HSCSD or GPRS connection:

1. Open your preferred connection from the Status screen. See *The Connection Monitor* on page 21 for details on opening a connection.
2. Start your Internet browser. You are online and can browse the Internet.

Send and Receive emails

You will need an email program installed on your PC in order to send and receive emails. You can send and receive emails using a CSD/HSCSD or GPRS connection:
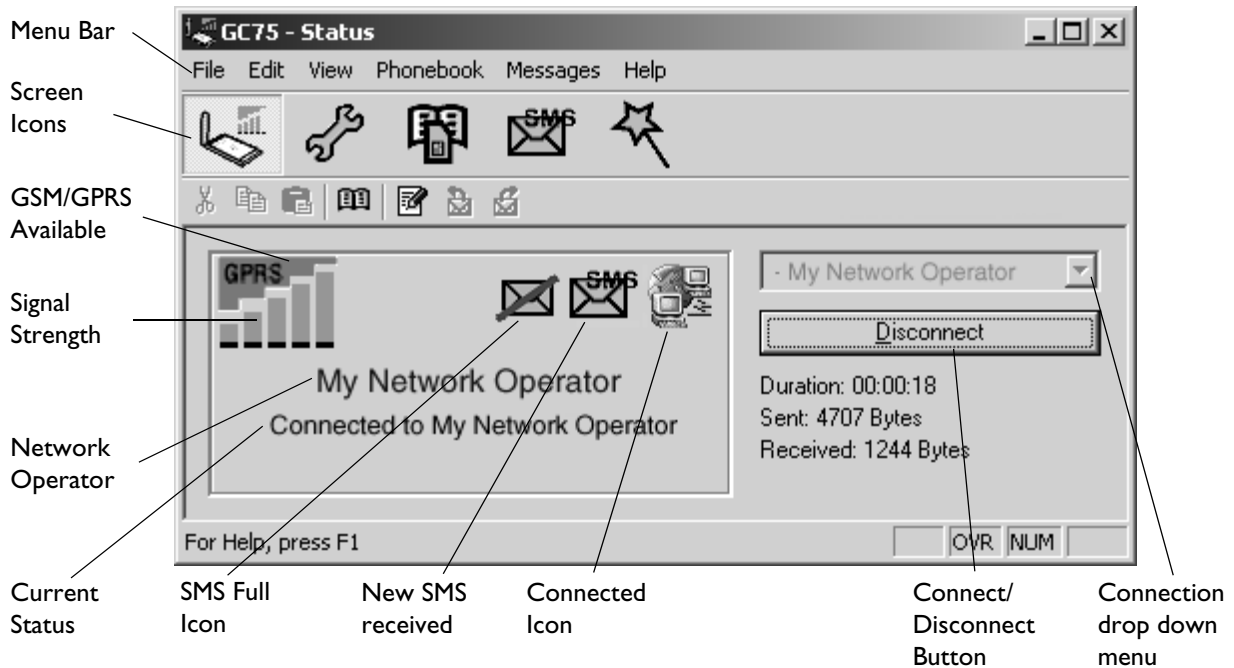
1. Open your preferred connection from the Status screen. See *The Connection Monitor* on page 21 for details on opening a connection.
2. Start your email program. You are online and can send and receive emails.

GC75 Manager Status Screen

The Status Screen is displayed when GC75 Manager opens. You can also open the Status screen by clicking [icon] or selecting **View** ➡ **Status**.

Menu Bar

Screen Icons

GSM/GPRS Available

Signal Strength

Network Operator

Current Status

SMS Full Icon

New SMS received

Connected Icon

Connect/ Disconnect Button

Connection drop down menu

The Status screen shows detailed SIM card and network status information.

The left side of the screen shows graphical icons, representing:

- Receive signal strength
- GPRS service status
- Unread SMS Text Message [icon] status (with SIM Full indication [icon]). See *GC75 Manager SMS Messages Screen* on page 33 for more details.
- Connection status

The left side of the screen also displays:

- The current Network Status, e.g. searching, radio off
- The connection progress messages

The right side of the **Status** screen displays the **Connection Manager**. When a connection is established, the connection statistics (duration, bytes transmitted, bytes received) are displayed and updated at regular intervals.

Note:
Statistics display is not supported on Window 98(SE) or Me platforms. To view statistic data when using these operating systems hover your mouse cursor over the standard Windows Dial-up Networking icon.

The Connection Monitor

The Connection Manager provides a means to connect, cancel or disconnect a GPRS or HSCSD/CSD data session. A drop-down selection box displays all the connections you have defined.

A drop-down menu allows you to quickly select the connection.

The **Control** button, located underneath the drop down menu, changes it's appearance depending on the state of the GC75 connection. The button allows you to:

- Initiate a dialup session (**Connect**)
- Cancel connection attempt (**Cancel**)
- **Disconnect** (Hang-up) an existing session
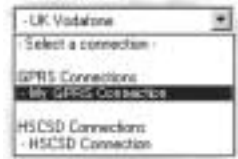
To create a Connection see *Create a Dial-Up Connection* on page 17.

Note:
You can also launch or terminate dialup networking sessions directly from the Windows Network Connections icon.

GC75 Manager Telephony Settings Screen

The Telephony Settings screen allows you view and change the GSM settings of the GC75.

The functions of the Telephony Settings screen are very similar to the settings that you have access to via a mobile phone's display.

> **Note:**
> Your GC75 has to be connected to your computer to make changes to the settings.

1. Click ![wrench icon] or select **View** ➡ **Telephony Settings.**
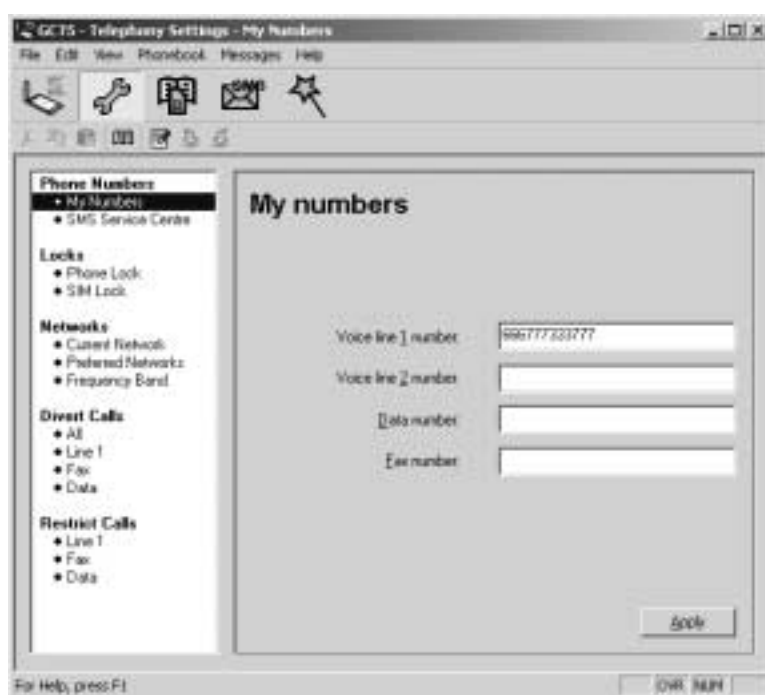
The window is divided into two areas: the navigation area on the left and the information area on the right.

When you have selected a setting in the navigation area, GC75 Manager retrieves the current setting information from the GC75 and displays the information in the right area.

Phone Numbers

My numbers

You can list all your own numbers here. The numbers are for personal reference only and have no operational effect on the GC75.

Voice line 1 and 2:

The voice number or numbers issued with your SIM card that you use for normal voice calls. If you have line 2 (alternate line service) enter in the **Voice Line 2 number** field.

Data:

The number used to make a data call to the GC75 (Mobile Terminated).

Fax:

The number used to send a fax to the GC75.

Click **Apply** when you have finished, to transfer the changes back to your GC75. This may take a few seconds.

SMS Service Centre

When you send a text message it goes to your operator's service centre, they then forward it to the correct recipient. The SMS service centre is identified by a telephone number.

Note:
The SMS Service Centre number is normally read automatically from your SIM card.

To Set or change the service centre address:

1. Enter your operator's service centre phone number in the Number text box.

2. Click **Apply** to transfer the setting to your GC75.

Locks

Phone lock

The phone lock protects the GC75 against unauthorized use if it is stolen and used with another SIM card. Phone Lock is not activated when you buy the GC75.

You can use this screen to change the default security code (0000) to any four to eight digit personalized code.

You can set the Phone Lock Status to one of the following states:

* **On** - A brief message *Phone locked* is displayed each time you turn on the computer. The **Enter phone lock code** dialog opens. Enter your code into the dialog and click **OK**.

* **Off** - The GC75 is not locked.

* **Automatic** - If the Automatic setting is selected, the message *Phone locked* only appears when a different SIM card is inserted into the GC75. After the security code has been entered correctly, the GC75 can be used with the new SIM card.

Note:
The Phone Lock code has four to eight digits and is shown as asterisks upon entry in the dialog.

To Change the Phone Lock code:

1. Click [Change Phone Code..].

2. The **Change the Phone Lock Code** dialog opens. Make the required changes and click **OK**.

3. Click **Apply** when you have finished, to transfer the changes back to your GC75. This may take a few seconds.

SIM lock

Some SIM cards are protected with a PIN (Personal Identity Number) at the time of purchase. If the SIM card lock is activated, you have to enter the PIN every time you turn on your PC and open GC75 Manager. If you enter your PIN incorrectly three times in succession, the SIM card is blocked and you need a PUK code, from your network operator, to unblock the SIM card.

• To activate the SIM card lock, select the **On** radio button.

Caution!
Only activate the SIM card lock if you know the PIN code.

• To cancel the SIM card lock, select the **Off** radio button.

Note:
You have to use your PIN code to turn the SIM card lock off.

To Change the PIN Code:
1. Click Change PIN Code.

2. Enter your old PIN code, followed by your new four digit PIN code. Confirm the new code by entering it again.

3. Click **OK**.

Note:
The SIM card lock only protects your subscription and not your GC75 from unauthorized use. If you change your SIM card, the GC75 will still work with a new SIM card.

4. Click **Apply** when you have finished to transfer the changes back to your GC75. This may take a few seconds.

Networks

Current Network

You can select which network you want to use by going to **Networks** and then choosing **Current Network**.

Searching for the available networks:
• Click **Retrieve**, the current network appears in the box with all the other currently available networks.

The available networks will fall into one of the following three categories:

• The home network.

• Available networks, the name of the network is included in a list of preferred networks on your SIM card, therefore, you can use the network.

• Forbidden networks, you can't use these networks except for emergency calls. If your home network and a forbidden network come to an agreement that allows you to use the forbidden network, you can select this network even though it is forbidden.

Choosing another network:

1. Uncheck the **Let my GC75 automatically choose a network for me**.

2. Select the network that you want to use.

3. Click **Apply** to transfer the setting to your GC75.

The message *Please wait* appears briefly on the screen. If you are not allowed to use the network that you have chosen, *Forbidden* is displayed.

> **Note:**
> HSCSD is not available in every GSM network and requires a supplementary roaming agreement between mobile operators for visiting users to use HSCSD. Check with your home operator regarding the country or region in which you want to roam.
>
> GPRS is commonly available in GSM networks, but fewer roaming agreements are in place. You may therefore need to explicitly select one of the available networks in order to use GPRS when abroad. Check with your home operator to find out which networks are GPRS roaming partners in the country or region in which you want to roam.

Preferred (network)

A list of preferred networks is stored on the SIM card. This is typically set up by your mobile operator as part of SIM manufacture. Preferred roaming partners are placed in the list so that you have the greatest range of available services whilst roaming. When the home network is not available, the GC75 will check the available networks against the preferred network list and select the one placed highest. Automatic network selection must be enabled.

If you want to add a new network:

1. Click **Add**, a new dialog with all the networks known to the GC75 appears on the screen.

2. Select the network that you want to add and click **OK**.

3. Click **Apply** to transfer the setting to your GC75 SIM card.

If you want to delete a network from the list:

1. Select the network that you want to delete.

2. Click **Remove**.

3. Click **Apply** to transfer the setting to your GC75 SIM card.

If you want to re-arrange the order of the networks listed:

1. Select the network that you want to move.

2. Click the **Up** or **Down** arrows to rearrange the order.

3. Click **Apply** to transfer the setting to your GC75 SIM card.

> **Note:**
> If the list of preferred networks is full, the **Add** button is disabled (grey).

Frequency Band

GSM operates in a number of different frequency bands. 900 and 1800 MHz are used in Europe, Asia, Australasia and Africa, whilst the 1900 MHz band is used in North and South America. By default your GC75 operates in 'tri-band' mode and automatically finds available networks in any of these frequency bands. It is not recommended to change this setting. See *GSM Performance and technical characteristics* on page 45 for a list of GSM frequency ranges.

Divert Calls

All

If you want to make certain that all your incoming calls are taken care of when you cannot answer them, you can use the Call divert service to divert them to another number that can handle the types of calls you expect to receive.

Note:
The Call divert service may not be available on all networks.

Selecting a call divert setting:

1. To obtain your current call divert settings from the network, click **Retrieve**.

2. Make your changes by identifying when you want to divert your incoming calls. You can select from four different diversion options:

   – **Always**: this diverts all incoming calls to the phone number that you have entered in the text box

   – **When busy**: for example, on CSD calls

   – **No reply**

   – **Not reachable**: for example, when your phone is turned off

3. If you know which number to divert your calls to, then type the number in the text box next to the divert option you have chosen. #
   Or #

   Click [ ] to choose a phone number from your phonebook.

4. Click **Apply**, to transfer your new settings to your GC75. This may take a few seconds.

Your call divert setting has now been stored in the network.

Line 1

You can use the Call divert service to divert your voice calls to another phone number.

Note:
The Call divert service may not be available on all networks.

Selecting a call divert setting:

1. To obtain your current call divert settings from the network, click **Retrieve**.

2. Make your changes and select in which situation you want to divert your incoming calls. You can select from four different diversion options:

   – **Always**: this diverts all incoming calls to the phone number that you have entered in the text box

   – **When busy**

   – **No reply**

   – **Not reachable**: for example, when your phone is turned off

3. If you know which phone number to divert your calls to, type the number in the text box next to the divert option you have chosen. #
Or#

Click to choose a phone number from your phonebook.

4. Click **Apply** to transfer them to your GC75. This may take a few seconds.

Your Line 1 divert setting has now been stored in the network.

Fax

If you want to route your incoming fax calls to another number, you can use the Call divert service.

Note:
The Call divert service may not be available on all networks. Also, if you are using the Call restricting function, this may influence Call divert.

Selecting a fax divert setting:
1. To obtain your current fax divert settings from the network, click **Retrieve**.

2. Select **Always** if you want to divert all the incoming calls to a specific phone number.

3. If you know which phone number to divert your calls to, type the number in the text box next to **Always**. #
Or #

Click to choose a phone number from your phonebook.

4. Click **Apply** to transfer your settings to your GC75. This may take a few seconds.

Your fax divert setting has now been stored in the network.

Data

If you want to route your incoming data calls to another number, you can use the Call divert service.

Note:
The Call divert service may not be available on all networks. Also, if you are using the Call restricting function, this may influence Call divert.

Selecting a data divert setting:
1. To obtain your current data divert settings from the network, click **Retrieve**.

2. Select **Always** if you want to divert all the incoming calls to a specific phone number.

3. Select the **Always** check box and enter the destination number or click to choose a phone number from your phonebook. Click **OK**.

4. Click **Apply** to transfer your settings to your GC75. This may take a few seconds.

Your data divert setting has now been stored in the network.

Restrict Calls

Restricting a certain type of call means that this type of call cannot be made to or from your GC75. You can restrict different types of outgoing and incoming calls.

The following call types can be restricted:

- all outgoing calls.

- all outgoing international calls.

- all outgoing international calls except to your own country.

- all incoming calls.

- all incoming calls when you are abroad (when roaming).

A password, issued with your subscription, is required to turn a call restrict on or off. Contact your network operator for further information.

Line 1 (restrict calls) Fax (restrict calls) and Data (restrict calls)

To Change the call restrict status for line 1, fax and data calls:

1. To get your current call restrict settings from the network, click **Retrieve**.

2. Tick the boxes next to the call types that you want to restrict.#
   Only select one outgoing and one incoming option.

3. When you have finished, click **Apply**.

4. Type your restriction password into the dialog and click **OK**.

Your call restrict settings have now been changed and stored in the network.

GC75 Manager Phonebook Screen

The GC75 Manager Phonebook screen helps you to organize your GC75's SIM Phonebook.

The Phonebook Screen

A SIM Phonebook can easily become disorganised; you can use the Phonebook screen to manage your SIM Phonebook entries.

You can add new numbers, edit existing numbers and export and import entries.

1. Click ![icon] to display the Phonebook screen.

2. Icons appear in the left pane representing the SIM Phonebook ![icon] and Saved Phonebook ![icon]. The first time the SIM Phonebook is opened in the Phonebook screen, an entire copy of the entries are copied to the Saved Phonebook. After this, any changes in the SIM Phonebook are automatically sent to the SIM card.

3. Click on the icon to display the Phonebook entries in the right pane.

    Note:
    Your GC75 must be inserted to display this information.

Phonebook Functionality

To Add a Number:

1. Select **Add new** in the Phonebook menu or click 📖 on the toolbar or key **Ctrl** and **N**.

2. The **New Phonebook Entry** dialog opens.

3. Enter the name and phone number.

4. Click **OK** to save the entry or **Cancel** to close the dialog.

   Note:
   Phonebook numbers are limited to 20 digits (including +) and names are limited to 18 alphanumeric characters.

   New entries are added to the next available SIM index position.

To Modify a number:

1. Select the number you want to modify.

2. Select **Modify...** in the Phonebook menu.

3. The **Edit Phonebook Entry** dialog opens.

4. The fields in the dialog display the current entry's name and number.

5. Edit the information.

6. Click **Save** to close the dialog and save your changes. #
   If the modified entry is in the SIM Phonebook the changes are automatically sent to the SIM.

To Find Entries:

1. Select **Find** in the Phonebook menu or key **Ctrl** and **F**.

2. The **Find** dialog opens. Enter the text or number you want to search for in the **Look for** field. The entry can be complete or incomplete.

3. Click **Find**. The GC75 Manager searches both Phonebooks, when a match is found it is displayed in the right pane. Click **Find Next** to search again.

4. Click **Close** when you have finished searching.

To Copy an Entry:

1. Select an entry from the SIM Phonebook or the Saved Phonebook.

2. Select **Copy To** in the Phonebook menu. The **Copy To** option is followed by the name of the Phonebook you haven't selected the entry from.

3. A duplicate entry is made in the specified Phonebook. The new entry is assigned the next available position in the destination Phonebook.

To Move an Entry:

1. Select an entry.

2. Select **Move To** in the Phonebook menu. The **Move To** option is followed by the name of the Phonebook you haven't selected the entry from.

3. The entry is moved from its current Phonebook and placed in the selected one. The new entry is assigned the next available position in the destination Phonebook.

To Import an Entry or Phonebook:

1. Select **Import** from the Phonebook menu.

2. Select the **Replace With Existing Phonebook** or **Merge with existing Phonebook** radio button.

3. Click [**...**] and browse to find the file you want to import.

Note:
The file must be a text file in comma separated value (CSV) format. Any invalid lines or files will be ignored.

4. Click **OK** in the browse dialog. The path and file name are displayed in the **Import File Name** field.

5. Click **Import** to complete the import procedure.

To Export an Entry or Phonebook:

1. Highlight the entries or open the Phonebook you want to export.

2. Select **Export** from the Phonebook menu.

3. Select **All** to export the entire Phonebook or **Selected Items** to export the highlighted entries.

4. Type a name for the file into the **Export File Name** field.

5. Click [**...**] and identify the save location.

Note:
The file will be saved as a text file in comma separated value (CSV) format.

6. Click **OK** in the browse dialog. The path and file name are displayed in the **Export File Name** field.

7. Click **Export** to complete the procedure.

Delete a number

1. Select the number that you want to delete.

2. Select **Delete**, from the Phonebook menu. Click **Yes** to confirm the deletion.

Note:
If you want to delete all numbers, select **Select All** from the Edit menu before clicking **Delete**.

To Send a New SMS Message:

1. Select an entry from a Phonebook.

2. Select **New Message To** from the Phonebook menu.

3. A new SMS Message dialog is opened and pre-addressed with the selected entries details.

GC75 Manager SMS Messages Screen

The GC75 Manager's SMS Messages screen enables you to view, compose, edit, save, copy, delete, reply or forward SMS messages from your GC75 to other mobile devices.

Note:
To use Message functionality SMS must be included in your subscription, contact your network operator for more details.

The SMS Messages screen is split in to a left and right area.

The left area displays the folders; SIM SMS, Saved Messages, Sent Items and Unsent Items.

The right area displays the contents of the selected folder. The top half of the right pane displays a list of received messages, sorted by date and the bottom half of the screen displays the content of a selected messages, this is referred to as the **Information View**.

The folders and their names are static, you can not change them.

Click to display the contents of the SIM Inbox. When GC75 Manager is opened any new SMS in the SIM Inbox are uploaded to the PC automatically.
A status flag indicates whether a message is read or unread.

If a new SMS arrives when the GC75 Manager is open is displayed on the Status screen and the SMS audio sound is played, if enabled in the **Setting** dialog. See *GC75 Manager Settings Options* on page 14.

If you want to keep an SMS, use the copy or move menu options to place it in the Saved folder. Click on the folder icon to display the contents of the Saved folder.

A copy of each SMS that you have sent is stored in this folder. Click on the folder icon to display them.

Any composed messages that have not been sent are displayed when you click on this icon.
SMS stored in this folder can be edited or sent when the GC75 is connected. Any SMS that fail during transmission are also stored here, you can resend them at any time.

Each time the SMS Messages screen receives a new SMS message from the SIM it checks the status of the SIM Inbox. If the SIM Inbox is full, a SIM Full icon is displayed in the left pane of the screen, see *SIM Inbox is Full:* on page 36.

Note:
For all the SMS Messages screen menu options to operate the GC75 must be registered successfully on a network. You must have a GSM signal to **Send** SMS, the button is disabled (grey) if you don't have a signal.

SMS Manager Functionality

To Send an SMS:

1. Select **Create New Message...** from the Messages menu or click .

2. The **New Message** dialog opens.

3. Enter the recipient's mobile phone number in the **To:** field or select a number from a phonebook by clicking **Lookup....**#
To send an SMS to multiple numbers, hold down **Ctrl** when selecting the numbers from the phonebook.

4. Type your message into the **Message:** field.

5. Make sure your GC75 is inserted and your card is registered on a live network.

6. Click **Send** to send the SMS, **Save** to move the SMS to your Saved folder or **Cancel** to close the dialog without sending the SMS.

Note:
An SMS message can contain up to 160 characters (or 140 characters on some networks). When you enter text in the text box a counter is displayed in the upper right corner, If the number of characters exceeds 160, the SMS will be sent as several messages. The recipient will see the message as one long message no matter how many message are sent, provided their device supports this functionality. Your network operator will charge you with the number of messages sent.

To Edit a Message:

When you are working with a message, you can edit the text by cutting, copying and pasting.

Moving Text Within Existing Messages:

1. Select the text you want to move.

2. Select **Cut** from the Edit menu or **Ctrl** and **X** on the keyboard.

3. Place the cursor where you want to insert the text and select **Paste** from the Edit menu or **Ctrl** and **V** on the keyboard.

Note:
If you want to copy text, select **Copy (Ctrl** and **C)** from the Edit menu instead of **Cut (Ctrl** and **X)**.

Reply to an SMS:

1. Select the folder where the message is located.

2. From the list, select the message you want to reply to. The contents of the message are displayed in the information view.

3. Select **Reply** in the Messages menu. A dialogue appears. The **To:** field is automatically filled in and the original message is displayed in the **Message:** field.

4. Type your reply and click **Send**.

To Forward an SMS:

1. Select the folder where the message is located.

2. From the list, select the message you want to forward. The contents of the message are displayed in the information view.

3. Click **Forward**, a dialogue opens.

4. Enter the phone number in the **To:** field or click **Lookup...** to select a number from a phonebook.#
To send an SMS to multiple numbers, hold down **Ctrl** when selecting the numbers from the phonebook.

5. Click **Send**.

Delete an SMS:

1. Select the folder where the message is located.

2. From the list, select the message you want to delete. The contents of the message are displayed in the information view.

3. Select **Delete** from the Edit menu, or press the **Delete** button on your keyboard.

4. A confirmation message box opens, click **Yes** to delete the message.

Note:
To delete all messages, click **Select All** from the Edit menu before you select **Delete**.

Folder Management:

Sorting SMS:
1. Select the folder where the messages you want to sort are located.

2. Click the **Date** column heading to sort the SMS in ascending or descending date order.

Moving SMS:
1. Select the folder where the message you want to move is located.

2. From the list, select the message. The contents of the message are displayed in the information view.

3. Click **Move to Saved Messages** from the **Messages** menu.

4. The selected message is moved.

Note:
To move all messages, click **Select All** from the Edit menu before you select **Move to Saved Messages**.

Copy an SMS:

1. Select the folder where the message you want to copy is located.

2. From the list, select the message. The contents of the message are displayed in the information view.

3. Click **Copy to Saved Messages** from the **Messages** menu.

4. The selected message is moved.

Note:
To copy all messages, click **Select All** from the Edit menu before you select **Copy to Saved Messages**.

SIM Inbox is Full:

When the GC75 Manager detects the SIM SMS storage is full, it displays on the Status screen and in the SMS Messages screen. You must delete some SMS from the SIM Inbox to free storage space so that you can continue receiving new SMS from the network.

Troubleshooting

This chapter lists some problems that you might encounter while using your GC75. Some problems require you to contact your service provider, but most of the problems you can easily correct yourself.

GC75 Manager Icon Errors

⊘ ----- appears in the task bar	Indicates that the Radio is turned off. Right click the CMI, select **Radio Settings** from the sub menu, select **On**.
----- appears in the task bar	Indicates that the GC75 cannot find a network, there is no network within range or the received signal is too weak. You have to move to get a stronger signal.
A signal is present but you can't connect to the GPRS network	Indicates that a GSM network is present, but no GPRS service is available. This can be caused by; no GPRS service in the area, you are trying to roam on a network for which no GPRS roaming agreement exists or there is a temporary fault on the network. Contact your network operator for more details.

Software Errors

Grey menu options in the software applications	Grey text indicates a function that is temporarily unavailable, for example due to your subscription or due to a certain setting which has not been turned on.

Error Messages

General

Modem not responding.... Error	Check the radio is turned on.
Dial-Up fails	Try to connect again.

SIM Card Errors

Wrong PIN/ Wrong PIN2	You have entered your PIN or PIN2 incorrectly. Enter the correct PIN or PIN2, and click **OK**. See *SIM lock* on page 24
Codes do not match	When you want to change a security code (for example your PIN) you have to confirm the new code by entering it again. This error occurs when the two codes, that you have entered do not match. See *Phone lock* on page 23.
PIN blocked/ PIN2 blocked	You have entered your PIN or PIN2 incorrectly three times in succession. To unblock, see *SIM lock* on page 24.
PUK blocked – contact operator	You have entered your personal unblocking key code (PUK) incorrectly 10 times in succession. Contact your network operator or service provider.

Error Codes

Windows® 98

Error 619: The port is disconnected during dial-up	An ISDN mode (V110 or V120) has been selected when creating a connection, but is not supported by the network. Select Analogue mode when creating the connection in the **Connection Wizard**.
Error 629: The port was disconnected by the remote machine during dial-up	Telephony settings are set to pulse dialling, change to tone dialling. Check the dialling settings for the current location (In **Control Panel** ➡ **Phone and Modem Option** ➡ **Dialling Rules** ➡ **Location** ➡ **Edit**) and change the **Dial using** setting to tone, or (if Pulse is a necessity), create a new location called **GC75 Anywhere** and set the dialling to Tone. **GC75 anywhere** location should then be used whenever you use the GC75.
Error 630: The port was disconnected due to hardware failure during dial-up	A Dial-up networking connection is already connected. Close the connected dial-up and try again.
Error 645: Internal authentication error during dial-up	Incorrect APN or CID selected for network. Modify your Dial-up Connection, see *Create a Dial-Up Connection* on page 17 for more details. Make sure that the APN file contains the name of the access point your network operator is using. See the support section on **www.SonyEricsson.com** site for a full list of network operator APNs.
Error 650: The Remote Access server is not responding during dial-up	Incorrect User ID and/or password. Re enter correctly.

Error 678: Computer you are dialling is not responding during dial-up	Either: Service is not supported by SIM (usually for CSD/HSCSD) or the computer is not answering. 1 Check SIM settings with your service provider if necessary, 2 Make sure that the server you are dialling is OK, 3 Make sure that Analogue mode has not been selected with 57.6kbps data rate (V110 or V120 mode must be selected and supported by the network)
Error 720: No PPP control protocols configured during dial-up	The service is not supported by the SIM, usually appears when you are trying to connect to GPRS Internet. Contact service provider to enable GPRS Internet access on SIM card

Windows® 2000

Error 619: The port is disconnected during dial-up	An ISDN mode (V110 or V120) has been selected when creating a connection, but is not supported by the network. Select Analogue mode when creating the connection in the **Connection Wizard**.
Error 678: Computer you are dialling is not responding during dial-up	Either: Service is not supported by SIM (usually for CSD/HSCSD) or the computer is not answering. 1 Check SIM settings with your service provider if necessary. 2 Make sure that the server you are dialling is OK. 3 Make sure that Analogue mode has not been selected with 57.6 kbps data rate (V110 or V120 mode must be selected and supported by the network).
Error 691: Access denied, user name and password incorrect on the domain during dial-up	The domain name entry is incorrect. Correct the domain name entry or delete if not required.
Error 718: PPP timeout during dial-up	This error indicates a PPP conversation started, but it was terminated because the remote server did not respond within an appropriate time. This can be caused by poor line quality or a problem with the server (ISP). This error can occur when your modem has connected to the ISP and has sent a username and password, but there is no response from the server. Wait a few minutes and try again

All Windows® Operating Systems

Error 734: The PPP link control protocol was terminated during dial-up	The APN entry is incorrect, the signal is weak or the connection is lost whilst dialling. See the support section on **www.SonyEricsson.com** site for a full list of network operator APNs.

Additional Information

Sony Ericsson Support Web Site

At **www.SonyEricsson.com/support** you can find help and tips in a few clicks. The support site gives you access to:

- the latest software updates
- tips on how to use your GC75 efficiently
- function guides
- additional help

Important Information

Please read this information before using your GC75.

Recommendations

- Always treat your product with care and keep it in a clean and dust-free place.
- Do not expose your product to liquid, moisture or humidity.
- Do not expose your product to extreme high or low temperatures.
- Do not expose your product to open flames or lit tobacco products.
- Do not drop, throw or try to bend your product.
- Do not paint your product.
- Do not attempt to disassemble your product. Only Sony Ericsson authorized personnel should perform service.
- Do not remove the SIM

Antenna

Only use an antenna that has been specifically designed by Sony Ericsson for your GC75. Use of unauthorized or modified antennas could damage your GC75.

Children

Do NOT allow children to play with your GC75. They could hurt themselves or others, or could accidentally damage the GC75. Your GC75 may contain small parts that could be detached and create a choking hazard.

Disposing of the Product

Your GC75 should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

Electronic Devices

Most modern electronic equipment, for example equipment in hospitals and cars, is shielded from RF energy. However, certain electronic equipment is not, therefore:

Do not use your GC75 near medical equipment without requesting permission.

The GC75 may affect the operation of some implanted cardiac pacemakers and other medically implanted equipment. Pacemaker patients should be aware that the use of a GC75 very close to a pacemaker might cause the device to malfunction. Avoid placing the GC75 over the pacemaker. If a minimum distance of 15 cm (6" inches) is kept between the GC75 and the pacemaker, the risk of interference is limited. If you have any reason to suspect that interference is taking place, immediately turn off your GC75. Contact your cardiologist for more information.

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy.

Turn your GC75 off in any facility where posted notices so require.

Aircraft

You MUST remove your GC75 before boarding any aircraft.

To prevent interference with communication systems and abide by the law, you must not use your GC75 while the plane is in the air.

Do not use it on the ground without permission from the crew.

Blasting Areas

Turn off your GC75 when in a blasting area or in areas posted *turn off two-way radio* to avoid interfering with blasting operations. Construction crews often use remote control RF devices to set off explosives.

Explosive Atmospheres

Turn off your GC75 when in any area with a potentially explosive atmosphere. It is rare, but your GC75 could generate sparks. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Areas with a potentially explosive atmosphere are often, but not always, clearly marked. They include fuelling areas, below deck on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles, such as grain, dust, or metal powders.

Do not transport or store flammable gas, liquid, or explosives in the compartment of your vehicle, which contains your GC75 and accessories.

Inserting and removing the SIM card – precautions against electrostatic discharge (ESD)

Do not touch the SIM card connectors. As a precaution, always make sure that the GC75 is already in your hand before you insert or remove the SIM card.

Technical Specifications

Product name	GC75
System	E-GSM 900 GSM 1800 GSM 1900
Services supported	CSD, HSCSD, GPRS, SMS Speech services are not supported
SIM Card	Small plug-in card, 3V or 5V type SIM Lock supported
Type Number	6130201-BV

Exterior Description

Size	PC Card Type II, 16 bit 85.6 mm long x 54.0mm wide x 5.0 mm thick
Weight	38g including antenna, excluding SIM card
Battery	Powered via the PC card slot i.e. uses laptop battery
Antenna	50 ohm interface; Antenna supplied

Ambient Temperatures

Operating	0 to 55 degrees C
Storage	-20 to 65 degrees C

Electrical Characteristics

Supported Voltages	3.3V ± 10%	4.75-5.25V
Nominal Operating Voltage	3.6V	5.0V
Standby Current	4.2mA	4.2mA
Standby Power Consumption (no PDP context active)	13.8mW	21.0mW
Idle current (9/2 multiframe paging period) (PDP context active)	5.0mA/7.6mA	5.0mA/7.6mA
Idle power (9/2 multiframe)	16.5mW/25mW	25mW/38mW

Maximum Current	800mA	800mA
Maximum Power Consumption	2W	3W

Operating System Support

Supported Operating Systems	Microsoft Windows™98 (SE) Microsoft Windows™Me Microsoft Windows™2000 Microsoft Windows™ XP
Minimum PC Specification	Processor size as recommended by Microsoft for the version of Windows® in use 30 MB free disk space

Current Consumption

Current Consumption	**Standby** Switched on but not making a call and not attached to GPRS Current Consumption < 5 mA **Idle** Connected to the Internet using GPRS, in an 'always connected' state with no data flowing Current Consumption < 8 mA **Transmitting (Max)** Maximum power output, GSM900 Current Consumption < 800 mA

GSM Performance and technical characteristics

Dimension	GSM 900/# E-GSM 900	GSM 1800	GSM 1900
Frequency Range	TX: 880 – 914 MHz RX: 925 – 959 MHz	TX: 1710 – 1785 MHz RX: 1805 – 1880 MHz	TX: 1850 – 1910 MHz RX: 1930 – 1990 MHz
Channel Spacing	200 kHz	200 kHz	200 kHz
Number of Channels	175 Carriers * 8 (TDMA)	374 Carriers * 8 (TDMA)	299 Carriers * 8 (TDMA)
Modulation	GMSK	GMSK	GMSK
TX Phase Accuracy	5 degrees (RMS) 20 degrees (Peak)	5 degrees (RMS) 20 degrees (Peak)	5 degrees (RMS) 20 degrees (Peak)
Duplex spacing	45 MHz	95 MHz	80 MHz
Frequency Stability	0.1ppm	0.1ppm	0.1ppm
Transmitter RF Power Output	33 dBm Class 4 2 W peak	30 dBm Class 1 1 W peak	30 dBm Class 1 1 W peak
Transmitter Output Impedance	$50T$	$50T$	$50T$
Transmitter Spurious Emission	According to GSM spec	According to GSM spec	According to GSM spec
Receiver RF Level	-102 dBm	-102 dBm	-102 dBm
Receiver RX Bit Error Rate	<= 10^{-4} (Static Ch.) <= 3% (EQ50 ch)	<= 10^{-4} (Static Ch.) <= 3% (EQ50 ch)	<= 10^{-4} (Static Ch.) <= 3% (EQ50 ch)

GSM Features Supported

ME SIM Lock	Yes
SIM Application Toolkit	Class 2 without call control.
USSD	Support is provided via AT commands; No MMI is provided
Speech Coding	Not applicable (GC75 does not support speech services)

CSD technical data

Standards	AT commands industry standard ETSI 07.05, 07.07 and 07.10, V.25ter command set supported
CSD Data Rates	9.6 kbps or 14.4 kbps depending on the GSM network
Compression	MNP5 (Increases data rate up to 2x depending on data type) V.42bis (Increases data rate up to 4x depending on data type) GSM network support required for compression
Error Correction	End to End MNP2 and LAPM (V.42) RLP Requires GSM Network support
GSM/ISDN	According to V.110

HSCSD Maximum Data Rates (kbps)

		9.6 kbps per timeslot	14.4 kbps per timeslot
4 + 1	**RX**	38.4	57.6
	TX	9.6	14.4
3 + 2	**RX**	28.8	43.2
	TX	19.2	28.8

The speeds given are maximums, Sony Ericsson cannot guarantee how fast your network will operate.

GPRS technical data

Data Rates	Multislot class 10 supported See table below
Mode of Operation	Class B (attaches to both GSM and GPRS at the same time; data connection is established using CS (CSD/HSCSD) or GPRS) The user may select CSD, HSCSD or GPRS modes via Dial-Up Networking configurations in Windows™
GPRS Specification SMG	SMG31bis
R Reference Point	Physical layer: RS232 virtual COM port Authentication mechanisms PAP and CHAP supported
IP Connectivity	PDP type IP is supported IPv4, terminated in Windows® DUN
SMS over GPRS	Mobile Originated and Mobile Terminated
QoS	Support for all 4 classes, details to be confirmed.
PDP Context	Up to 10 PDP Context descriptions stored in GC75 memory PDP Context description edited via supplied Wizard or AT-command Simultaneous PDP contexts not supported Network initiated PDP context activation
SIM	Support for GPRS aware as well as non-GPRS-aware SIMs
TCP/IP Header Compression	
Compression	V42bis Support also required in GSM network
GPRS Encryption	GEA1 GEA2 Support also required in GSM network
GPRS Frequency Hopping	Supported
GPRS IP allocation	Dynamic Static

GPRS Maximum Data Rates

		CS-1 # 9.05 kbps	CS-2 # 13.4 kbps	CS-3 # 15.6 kbps	CS-4 # 21.4 kbps
4 + 1	**RX**	36.2	53.6	62.4	85.6
	TX	9.05	13.4	15.6	21.4
3 + 2	**RX**	27.15	40.2	46.8	64.2
	TX	18.1	26.8	31.2	42.8

Speed achieved depends on the Coding Scheme supported by the GSM Network. The speeds given are maximums, Sony Ericsson cannot guarantee how fast your network will operate.

SMS Technical Data

Concatenated SMS	Yes.
SMS interface	Supplied end user application

Radio power output

GSM900	Class 4	2 W
GSM1800	Class 1	1 W
GSM1900	Class 1	1 W

Supported Languages

Quick Start Guide **PC Software** **User's Guide (PDF)**	English (EN) Danish (DA) Dutch (NL) Finnish (FI) French (FR) German (DE) Italian (IT) Norwegian (NO) Spanish (ES) Swedish (SV) Portuguese (PT)
AT Commands **Manual**	English

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Declaration of Conformity

We, **Sony Ericsson Mobile Communications AB** of

Nya Vattentornet

S-221 88 Lund, Sweden

declare under our sole responsibility that our product,

Sony Ericsson type 6130201-BV,

and in combination with our accessories, to which this declaration relates is in conformity with the appropriate standards 3GPP TS 51.010-1, EN 301489-7 and EN 60950, following the provisions of, Radio Equipment and Telecommunication Terminal Equipment directive **99/5/EC** with requirements covering EMC directive **89/336/EEC**, and Low voltage directive **73/23/EEC**.

$C\epsilon$ 0682

Basingstoke, January 2003

Place and date of issue

Anders Franzén

Corporate Vice President M2M Com

We fulfil the requirements of the R& TTE Directive (**99/ 5/ EC**)

FCC Statement

FC©

Before a modem is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations as required by the FCC for each model. Body worn measurements are made while the product is in use and worn on the body with an Sony Ericsson accessory. The design and composition of an accessory can affect the body worn SAR (Specific Absorption Rate) levels for the modem card. The distance used in the SAR Test Report for this device is 4mm.

Sony Ericsson has not measured, and makes no representation about, the body worn SAR levels when the modem card is used with non-Sony Ericsson accessories.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) The device must accept any interference received, including interference that may cause undesired operation.

FCC-ID: PY76130201

Canada Certification: 4170B-6130201

Appendix A - Connection Parameters

General Connection Parameters for CSD/HSCSD and GPRS

Required	Useful information
Telephone number or Access Point Name (APN)	Number you need to dial to reach your service provider. Use the full number including country code and area code, e.g. +46 33 555 2525. Or The APN server resource to contact, for example, # Interent.operator.net - to connect to the Internet via the mobile operator's or your corporate Intranet via a VPN
Bearer capability: CSD, HSCSD or GPRS?	You will need to know the bearer capability provided by your service provider, so you can select the appropriate option during set up.
CSD Network Speed	If you intend to create connections via CSD contact your network operator and check the supported speeds.
HSCSD Network Speed	If you intend to create connections via HSCSD contact your network operator and check the supported speeds.
Username	The username your service provider gave you when the account was set up. Some dial-up accounts do not require a Username, in this case leave the field blank.
Password	Password associated with the username, given to you by the service provider. Some dial-up accounts do not require a Password, in this case leave the field blank.
IP assignment: Server / Static	An 'address' that the service provider knows you by and uses to route information to and from your GC75. Your IP address will either be: Server - assigned by the service provider when you connect. Static - assigned once by the service provider or the IT Manager. If your IP address is Static you must enter it into Own IP address fields which is available when you select Details in the Connection APN dialog.
DNS assignment: Server / Static	This tells the GC75 where to find the service provider's DNS Service. DNS translates addresses such as www.sonyericsson.com to the numeric IP address so that the information can be accessed.# Like IP assignment above, the DNS can be static or allocated by the service provider when you connect. If static is selected additional fields need to be completed containing the static information.

Own IP address	Only required if the IP assignment is static. Format example: 123.9.45.3. # Do not enter any leading 0s when typing in IP address.
Primary DNS	Only required if the DNS assignment is static. Format example:123.9.45.2
Secondary DNS	Only required if the DNS assignment is static. Format example: 123.9.45.1
Access Point Name (APN)	If the APN is set to default you will have to enter the name of the access point your network operator is using.

GPRS Specific Parameters

Required	Useful information
Enable Data Compression	Select to Enable Data Compression. Data compression enables information to be transmitted beyond the actual connection speed. Data, particularly text and graphics, usually contain repeated sequences of identical information. Data compression works by replacing many characters of repeated information with a few characters and transmitting only one copy of repeated sequences of data.
Enable Header Compression	Select to Enable Header Compression. without header overhead, fewer transceivers and radio network controllers are needed to handle traffic therefore speeding up data transfer.
Request Quality of Service	Select the bandwidth you want to use from the list supplied: **Precedence**; Subscribed, Normal, High or Low **Delay**; Subscribed, Class 1, Class 2, Class 3 or Best effort **Reliability**; Subscribed, Class 1, Class 2, Class 3, Class 4 or Class 5 **Peak Rate**: Subscribed, Class 1, Class 2, Class 3, Class 4, Class 5, Class 6, Class 7, Class 8 or Class 9 **Mean Rate**; Subscribed, Class 1, Class 2, Class 3, Class 4, Class 5, Class 6, Class 7, Class 8, Class 9, Class 10, Class 11 or Class 12
Minimum Quality of Service	Select the minimum bandwidth you will use from the list supplied **Precedence**; Subscribed, Normal, High or Low **Delay**; Subscribed, Class 1, Class 2, Class 3 or Best effort **Reliability**; Subscribed, Class 1, Class 2, Class 3, Class 4 or Class 5 **Peak Rate**: Subscribed, Class 1, Class 2, Class 3, Class 4, Class 5, Class 6, Class 7, Class 8 or Class 9 **Mean Rate**; Subscribed, Class 1, Class 2, Class 3, Class 4, Class 5, Class 6, Class 7, Class 8, Class 9, Class 10, Class 11 or Class 12

CSD/HSCSD Specific Parameters

Required	Useful information
Preferred Connection Speed (bits/s)	Select your preferred network connection speed from the drop down list provided: 9600, 14400, 19200, 28800 or 38400
Connection Mode	Select the method you want to use to connect to the network from the options provided: analogue, ISDN V.110 or ISDN V.120
Compression	Use to speed up data transfer. You can select to **Enable Data Compression** and **Header Compression.**
Transparent	Choose to enter **Transparent Mode HSCSD**. In this mode the transmission on the GSM circuit connection is treated as a packet data flow. The same packet will be sent many times if a error occur during transmission. GSM also supports transparent mode where bit error are not corrected.

Glossary

Bearer

Path over which data flows. Specifically in CSD and HSCSD, the type of telephony link from the GSM network to the server - V PSTN or ISDN.

bps

Bits per second - rate of data flow.

COM Port

Defines a serial/RS-232 port within the Windows® environment. May be physical (COM1 port on the rear of the PC) or virtual (COM5 port communicating with a PC card modem)

CS

Circuit Switched. Connection from A to B which has a fixed bandwidth and is maintained over a period of time, for example a voice telephone call.

CS-1 to CS-4

Coding Scheme. Determines the data rate per timeslot in GPRS.

CSD

Circuit Switched Data. CSD is a GSM service providing a CS data connection at a rate of 9.6 or 14.4 kbps.

DUN

Dial-Up Networking.

e-GSM

Extended GSM. New frequencies specified by the European Radio Communications Committee (ERC) for GSM use when additional spectrum is needed (Network-dependent). It allows operators to transmit and receive just outside GSM's core 900 frequency band. This extension gives increased network capability.

ETSI

European Telecommunications Standards Institute. www.etsi.org

GGSN

Gateway GPRS Support Node

GPRS

General Packet Radio Services.

GSM

Global System for Mobile Communications. GSM is the world's most widely-used digital mobile phone system, now operating in over 160 countries around the world.

GSM 900

The GSM system family includes GSM 900, GSM 1800 and GSM 1900. There are different phases of roll-out for the GSM system and GSM phones are either phase 1 or phase 2 compliant.

GSM 1800

Also known as DCS 1800 or PCN, this is a GSM digital network working on a frequency of 1800 MHz. It is used in Europe and Asia-Pacific.

GSM 1900

Also known as PCS. Refers to a GSM system running in the 1900MHz band. Used in the USA and Canada, for instance.

HSCSD

High Speed Circuit Switched Data.

HTML

HyperText Markup Language.

HTTP

HyperText Transfer Protocol.

ISDN

Integrated Services Digital Network. Can provide circuit-switched data connections in multiples of # 64 kbps.

ISP

Internet Service Provider.

kbps

Kilobits per second - rate of data flow.

LAN

Local Area Network.

ME

Mobile Equipment.

MO

Mobile Origination. For example, an SMS message sent from a mobile terminal.

MMI

Man-Machine Interface.

MS

Mobile Station.

MT

Mobile Termination.

PC

Personal Computer.

PCS

Personal Communications Services, often used to describe GSM1900 networks.

PC Card

A card having physical and electrical characteristics specified by PCMCIA providing extra functionality when inserted into a laptop PC. Typical examples are modems and network cards. Type refers to the thickness of the card. The GC75 is type II.

PCMCIA

Personal Computer Memory Card International Association – defines specifications for PC Cards. www.pcmcia.org

PDP

Packet Data Protocol.

phonebook

A memory in the SIM card where phone numbers can be stored and accessed by name or position.

PSTN

Public Switched Telephone Network, for example ordinary analogue phone line for speech and/or computer modem.

RADIUS

Remote Access Dial-In Service. Facility at the ISP or corporation to manage remote data connections.

RX

Receive

SC

Service Centre (for SMS).

Service Provider

A company that provides services and subscriptions to GC75 users.

SIM card

Subscriber Identity Module card – a card that must be inserted in any GSM-based mobile terminal. It contains subscriber details, security information and memory for a personal directory of numbers. The card can be a small plug-in type or credit card-sized, but both types have the same functions. The GC75 uses the small plug-in card.

SMS

Short Message Service. Allows messages of up to 160 characters to be sent and received via the network operator's message centre to a GC75.

TCP/IP

Transmission Control Protocol/Internet Protocol.

TCP/IPv4

TCP/IP Version 4. Most widely implemented form of TCP/IP today having a 4 byte address format such as 212.161.127.136.

TE

Terminal Equipment. Generic term for GSM terminals such as phones and PC cards.

Terminal Adaptor

Generic term for the equipment terminating a digital comms line such as an ISDN2 line. The GC75 is a Terminal Adaptor since it interfaces to GSM digital data services.

TLS

Transport Layer Security. Used by Web browsers, for example.

TX

Transmit

Type II

Refers to thickness of a PC Card as defined in the specification from PCMCIA.

URL

Uniform Resource Locator.

USSD

Unstructured Supplementary Services Data. Narrow-band GSM data service. For example entering *79*1234# might return the stock price for stock 1234.

V.110

ETSI standard for data over an ISDN circuit.

V.120

ETSI standard for data over an ISDN circuit.

VPN

Virtual Private Network.

WAP

Wireless Application Protocol. A global standard specified in order to make Internet services available for mobile users.

www.ericsson.com/technology/WAP.shtml

WWW

World Wide Web.

XML

Extensible Markup Language

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